



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 855,253	05/15/2001	Haim Feldman	004070 USA-PDC/WF/DB	8980

32588 7590 05/07/2003

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,253

Applicant(s)

FELDMAN, HAIM

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 2-10, 17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 26 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to remarks filed March 26, 2003. Claims 1-19 are currently pending.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 12-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (U.S. Patent 5,572,323).

Regarding claims 1, 12-16 and 18, Maeda et al. disclose (see Figure 2) an optical apparatus and method for determining a position of an article (13), the apparatus comprising an illumination unit (9), focusing optics (12) and a focus detection unit (11, 14, 15), wherein: the illumination unit (9) is operable to generate incident light and illuminate an elongated region of the article for producing light returned from the illuminated region; the focusing optics (12) directs the incident light toward the article and directs at least a portion of the returned light toward the focus detection unit; and the focus detection unit (11, 14, 15) comprises an optical system (11, 14) and a detector (15), the optical system being operable to collect the directed portion of the returned

Art Unit: 2878

light and create at least two images on a sensing surface of the detector in the form of at least two interference patterns (see Figure 12; left and right side), wherein at least one pattern is created by interference (see Figures 11B and 11C) between: light components of the collected light that propagated within a first periphery region of an optical axis of the focusing optics; and light components of the collected light that propagated within a paraxial region of the optical axis; and wherein at least one other interference pattern is created by interference between: light components of the collected light that propagated within a second periphery region of the optical axis, substantially symmetrical to the first periphery region with respect to the optical axis; and light components of the collected light that propagated within the paraxial region of the optical axis; and wherein data representative of a relation between intensity profiles in the at least two interference patterns is indicative of the position of the article relative to a focal plane of the focusing optics (see column 10, lines 29-35; defocusing). Maeda et al. further disclose (see Figure 2) a processor (100) coupled to an output of the detector for receiving data representative of the at least two images and generating output signals indicative of the position of the article relative to the focal plane and generating a focus error correction signal in a feedback loop as claimed (see also column 17, lines 1-20).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2878

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al.

Regarding claim 11, Maeda et al. disclose the claimed invention as set forth above. Maeda et al. do not specifically disclose a display as claimed. However, providing a display of detected results is notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a display to show the first and second images in the apparatus of Maeda et al. to quickly present the results to a user for verification and improve the operation of the device.

Allowable Subject Matter

6. Claims 2-10, 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: an optical apparatus and method for determining a position of an article as claimed, more specifically in combination with the interference patterns comprising two lines of dark and light fringes which are aligned in two lines when in focus or having a blocking plate with at least three parallel slits are not disclosed or made obvious by the prior art of record.

Response to Arguments

8. Applicant's arguments filed March 26, 2003 have been fully considered but they are not persuasive.

Applicant asserts that Maeda et al. disclose only one interference pattern. However, Examiner has referenced Figure 12 of Maeda et al. which shows at least two interference patterns (left pattern and right pattern) as claimed. Maeda et al. uses the term "interference pattern" to refer to both the left and right patterns as Figure 12 shows a pattern being divided along the dashed line. That is, an interference pattern divided in half produces two interference patterns. A reasonable interpretation is that "the interference pattern" is composed of at least two interference patterns (a left pattern and a right pattern). Thus, Maeda et al. does anticipate the claimed invention and the above rejection is proper.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2878

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
April 28, 2003



Que T. Le
Primary Examiner